WHAT IS CLAIMED IS:

1. A data storage unit, comprising:

a data storage layer having a data storage area with data stored thereon;

a light beam emitter for selectively directing a beam of light toward the data storage layer to read said data from the data storage area;

the storage layer being partially transparent to the beam of light and the storage area filtering the amount of light passing through the storage layer;

a layer (LASL) adjacent to the data storage layer in which carriers are generated in response to the amount of light reaching the LASL; and

a detection region in carrier communication with the LASL for measuring the carrier transport in the detection region to determine the state of the storage area.

2. The data storage unit as recited in claim 1, wherein the storage layer is closer to the light beam emitters than the LASL.

3. The data storage unit as recited in claim 1, wherein the storage layer acts as a variable light absorber depending on the state of the storage layer.

4. The data storage unit as recited in claim 1, wherein the storage layer acts as a variable reflector depending on the state of the storage layer.

5. The data storage unit as recited in claim 2, further comprising another photodiode layer beneath the LASL, wherein the LASL forms a photodiode with the photodiode layer and the detection region is the junction between the LASL and the photodiode layer.

6. The data storage unit as recited in claim 5 wherein a photovoltage or photocurrent detector is connected across the photodiode junction.

7. The data storage unit as recited in claim 2, wherein the LASL is a photoconductor having first and second electrodes therein and the detection region is the area between the first and second electrodes.

8. The data storage unit as recited in claim 7 wherein a current detector is connected between the first and second electrodes.

9. The data storage unit as recited in claim 1 wherein the LASL is a photoluminescent layer and the detection region is a photon detector in light communication with the LASL.

10. The data storage unit as recited in claim 9, wherein the storage layer is a variable filter of the light reaching the LASL, the amount of the light being filtered being dependent on the state of the storage area.

11. The data storage unit as recited in claim 9, wherein the LASL is a converter of the wavelength of the light from the beam emitters to a wavelength that is conducive to detection in the detection region.

12. The data storage unit as recited in claim 9, wherein the LASL is closer than the storage layer to the light beam emitters.

13. The data storage unit as recited in claim 9, wherein the LASL is a converter of the wavelength of the light from the beam emitters to a wavelength that is conducive for the storage layer to provide contrast in the amount of transmitted light dependent upon the state of the storage area.

14. The data storage unit as recited in claim 9, wherein the storage layer is closer than the LASL to the light beam emitters.

15. A method for reading data in a data storage unit including a data storage layer having a data storage area with data thereon, comprising:

disposing a layer adjacent to the storage layer (LASL);

directing a light beam from a light beam emitter towards the LASL and the data storage layer;

filtering a portion of the light passing through the data storage layer in a variable amount, depending on the state of the data storage area in the data storage layer;

generating a carrier flow in the LASL corresponding to the amount of light reaching the LASL from the beam emitters; and

measuring the carrier transport in a detection region in carrier communication with the LASL.

16. The method recited in claim 15 wherein the storage layer affects the carrier flow generated in the LASL by filtering the amount of light that reaches the LASL from the read optical beams, the degree of filtering being representative of the state of the storage area.

17. The method recited in claim 15, wherein the storage layer is nearer than the LASL to the beam emitter.

18. The method recited in claim 17, wherein the LASL forms a photodiode with a photodiode layer and the detection region is the junction between the LASL and the photodiode layer.

19. The method recited in claim 17, wherein the LASL is a photoconductor having first and second electrodes therein and the detection region is the area between the first and second electrodes.

20. The data storage unit as recited in claim 15 wherein the LASL is a photoluminescent layer and the detection region is a photon detector in light communication with the LASL.

21. A data storage unit, having a data storage layer with a data storage area having at least two states for storing data stored thereon, comprising a layer (LASL) adjacent to the data storage in which carriers are generated for determining the state of the storage area.

22. The data storage unit as recited in claim 21, wherein carriers are generated in the LASL in response to a light beam directed towards the LASL.

23. The data storage unit as recited in claim 22, wherein the data storage layer is a variable light filter for the light from the light beam, the amount of filtered light depending on the state of the data storage area.

24. The data storage unit as recited in claim 21, wherein the LASL provides a protective cover for the data storage layer.

25. The data storage unit as recited in claim 21, wherein the LASL provides a diffusion barrier for the data storage layer.

26. The data storage unit as recited in claim 21, wherein the LASL provides a thermal layer for the data storage layer.

27. The data storage unit as recited in claim 21, wherein the LASL facilitates the growth of the data storage layer on the LASL.

28. A data storage unit, having a data storage layer with a data storage area for storing data stored thereon, comprising a medium in the data storage area capable of changing between at least two states, the medium being conducive to providing a substantial contrast between the states in light filtering characteristics.

29. The data storage unit as recited in claim 28, wherein the medium is conducive to providing a substantial contrast between states in light absorbing characteristics.

30. The data storage unit as recited in claim 28, wherein the medium is conducive to providing a substantial contrast between states in light reflecting characteristics.